



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/467,972	12/21/1999	SATOSHI KUROYANAGI	1046.1206/JD	3079

21171 7590 08/26/2003

STAAS & HALSEY LLP
SUITE 700
1201 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER

SEDIGHIAN, REZA

ART UNIT	PAPER NUMBER
----------	--------------

2633

DATE MAILED: 08/26/2003

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/467,972

Applicant(s)

KUROYANAGI ET AL.

Examiner

M. R. Sedighian

Art Unit

2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10 and 11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 10 and 11 is/are rejected.
- 7) ☒ Claim(s) 7 and 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 04 June 2003, 7/23/03 is: a) ☒ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

U.S. Patent and Trademark Office
PTO-326 (Rev. 04-01)

Office Action Summary

Part of Paper No. 10

1. This communication is responsive to applicant's 6/4/03 amendments in the application of Kuroyanagi et al. for "Optical Path Cross Connect System with High Expanding Characteristic" filed 12/21/99. The amendments have been entered. Claims 1-8 and 10-11 are now pending.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okayama (US patent No: 6,097,517) in view of Kuroyanagi et al. (US patent No: 6,072,610) and in further view of Jahreis (US patent No: 5,959,748).

Regarding claims 1 and 3, Okayama discloses an optical path cross connect device (50, fig. 8) for accommodating a plurality of inter-office transmission line (51, fig. 8) with wavelength multiplexing (col. 9, lines 40-55) and an intra-office transmission line (lines connected to router 11c in fig. 8), comprising: a plurality of wavelength branching units (11a, 11b, fig. 8) for demultiplexing the optical signals (col. 7, lines 19-21) to a first optical path group (53, fig. 8), an intra-office signal input unit (11c, fig. 8) for repeating an optical signal to the first optical path group (optical signals from router 11c are connected to the switch 56), "m" pieces of routing units (56, 57, 58, fig. 8) for inputting thereto an optical signal outputted from the branch units (the outputs from branch units 11a and 11b are connected to the switch 56) and intra office signal input unit (the output of router 11c is connected to the switch 56), wherein m pieces of routing units (56, 57, 58, fig. 8) being subdivided in a unit of n wavelengths (for example switch

Art Unit: 2633

56 corresponds to λ_2 , λ_5 , λ_8 , fig. 8) as wavelengths ranges to be processed are different from each other (col. 9, lines 56-58, note that each switch 56, 57 and 58 corresponds to different wavelength signals), a plurality of wavelength combining unit (12a, 12b, fig. 8) for selectively multiplexing the optical signal (col. 7, lines 31-34), and an intra-office output unit (12c, fig. 8). Okayama differs from the claimed invention in that Okayama does not specifically disclose the intra-office input unit is used for repeating a non-multiplexed optical signal. Okayama teaches wavelength routers 11 and 12 have the wavelength selection characteristics (col. 7, lines 1-14). Therefore, it would have been obvious to an artisan at the time of invention to incorporate one of the routers of Okayama such as router 11c as an intra-office input unit for repeating the input optical signal which can be a multiplex or a non-multiplex optical signal to further reroute the signals to different destinations for further signal processing. Kuroyanagi discloses an optical transmission system (col. 11, lines 56-60 and fig. 5), wherein an intra-office input unit (40, fig. 5) is provided with intra-office transmission line (3, fig. 5) for repeating a non-multiplex optical signal (col. 11, lines 61-62). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate an optical branch unit such as the one of Kuroyanagi for the optical router 11c in the optical switching network of Okayama in order to repeat an input non-multiplex optical signal such as an auxiliary information signal, or a control signal to further reroute such signals to different destinations for signal processing and control. The modified optical transmission and switching of Okayama and Kuroyanagi further differs from the claimed invention in that Okayama and Kuroyanagi do not disclose converting the input optical signals into a predetermined wavelengths. Jahreis discloses an optical switch (R, fig. 1) that is connected to respective line wavelength converters (col. 5, lines 52-58 and λ/λ_1 , λ/λ_p , fig.

1). Therefore, it would have been obvious to an artisan at the time of invention to incorporate wavelength converters such as the ones of Jahreis along the respective switch output lines in the modified routing system of Okayama and Kuroyanagi to provide switching for one or more of the wavelengths into a predetermined wavelength.

Regarding claims 2 and 4, Okayama discloses the optical signal transferred to the intra-office transmission line (the input line that is connected to router 11c in fig. 8) is wavelength multiplexed (col. 7, lines 28-30) and both the intra-office input unit and intra-office output unit repeat the wavelength-multiplexed optical signal (routers 11c and 12c can provide the same multiplexed signal at the input and at the output).

Regarding claims 10-11, Okayama discloses a plurality of optical path cross-connect devices (56, 57, 58, fig. 8) are employed to constitute the network (the optical switch system 50 can constitute an optical network).

4. Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okayama (US patent No: 6,097,517) in view of Kuroyanagi et al. (US patent No: 6,072,610) and in view of Jahreis (US patent No: 5,959,748) and in further view of Suzuki et al. (US patent No: 5,005,166).

Regarding claim 5, the combination of Okayama, Kuroyanagi, and Jahreis further differs from the claimed invention in that Okayama, Kuroyanagi, and Jahreis do not disclose the intra-office input and output units each constituted by an optical space switch. Suzuki discloses an optical transmission system (fig. 10) that is comprised of inter-office transmission lines (1-1, 1-2, fig. 10), an intra-office transmission line (1-n, fig. 10), wavelength branching units (11-1, 11-2, fig. 10), an intra-office signal input unit (10A-n, 11-n, fig. 10), a plurality of routing units (S1-1,

Art Unit: 2633

S2-1 and G1-1, G2-1, fig. 10), wavelength combining units (12-1, 12-2, fig. 10) and an intra-office output unit (12-n, 10B-n, fig. 10), wherein the intra-office input (10A-n, 11-n, fig. 10 and 20, fig. 11) and output unit (12-n, 10B-n, fig. 10 and 20, fig. 11 and 40, fig. 12) each constituted by an optical space switch (24-1, fig. 11, note that each wavelength and time switching stages 10A-n and 10B-n shown in fig. 10, constitute by an optical space switch 24-1, shown in fig. 11). Therefore, it would have been obvious to an artisan at the time of invention to incorporate an optical switch and branch unit such as the one of Suzuki for one of the input and output routers 11c and 12c in the modified optical switching network of Okayama, Kuroyanagi, and Jahreis in order to provide a multistage configuration for the transmission and switching of optical signals with the same or different wavelengths along different output waveguides to different destinations.

Regarding claim 6, Suzuki further discloses the intra-office input unit (10A-n, 11-n, fig. 10 and 20, fig. 11) is arranged by a wavelength division demultiplexer (21, fig. 11) and an optical space switch (24-1, fig. 11) and the intra-office output unit (12-n, 10B-n, fig. 10 and 20, fig. 11 and 40, fig. 12) is arranged by an optical switch (43, fig. 12), a wavelength converter (45-1, fig. 12) and a multiplexer (46, fig. 12).

5. Claims 7-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. R. Sedighian whose telephone number is (703) 308-9063. The examiner can normally be reached on M-F (from 9 AM to 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (703) 305-4729. The fax phone numbers for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.


JASON CHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600